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METALLIC PROTECTIVE LAYER

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application is the US National Stage of International Application No. PCT/EP2004/013661, filed December 1, 2004 and claims the benefit thereof. The International Application claims the benefits of European Patent application No. 03028577.9 filed December 11, 2003. All of the applications are incorporated by reference herein in their entirety.

FIELD OF THE INVENTION

[0002] The invention relates to a metallic protective layer as described in the claims and a layer system as described in the claims.

BACKGROUND OF THE INVENTION

[0003] Metallic protective layers for protecting a component, in particular a component which consists of a superalloy based on iron, nickel or cobalt, against corrosion and oxidation in particular at high temperatures, with the component, in particular a component of a steam or gas turbine, being exposed to a flue gas or the like at a high temperature, are generally known.

[0004] Most of these protective layers are known under the collective name MCrAlX, where M represents at least one of the elements selected from the group consisting of iron, cobalt and nickel and further essential constituents are chromium, aluminum and X=yttrium, although the latter may also be partially or entirely replaced by an equivalent element selected from the group consisting of scandium and the rare earth elements.

[0005] Typical coatings of this type are known from US patents 4,005,989 and 4,034,142. Moreover, it is known from the latter patent that an additional silicon content can further improve the properties of protective layers of the type described above.

[0006] Furthermore, EP-A 0 194 392 has disclosed numerous special compositions for protective layers with admixtures of further elements for various applications. In this context, the element rhenium as an admixture forming up to 10% by weight, as well as many other elements that can optionally be added, is mentioned. In view of the lack of more specific further ranges for possible admixtures, however, none of the protective layers indicated is qualified for special conditions, such as for example on rotor blades and guide vanes of steam